

REMARKS

Claims 1-23, 25-31, and 33-41 are pending in this application; Claims 1, 2, 3, 6, 7, 11, 15, 16, 20-22, 25, 29, 31, 34, 36, 40, and 41 have been amended; and, Claims 24, 32, and 42-43 have been canceled.

The Examiner stated that Claims 1-41 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph. The Applicant submits that all pending Claims now comply with 35 U.S.C. 112, second paragraph, and are in condition for allowance.

The Examiner has objected to Figure 2 because the words "Intital" in step 102 and "Exra" in step 106 were misspelled. The Applicant requests that the Examiner substitute the attached, corrected Figure 2 showing the proper spellings of the words "Initial" and "Extra" for the initially filed Figure. 2. Corrected Figure 2 has been labeled "Replacement Sheet." The Applicant submits that no new matter has been added by corrected Figure 2.

The Examiner stated that "the means for allocating recited in Claim 29, lines 11-26 must be shown" in the figures. The Applicant respectfully submits that it is. The Applicant refers the Examiner to page 14, lines 3-12 and page 8, line 5 to page 10, line 2 of the original specification, showing that at least the receiver and/or transmitter including one or more of the respective subcomponents may serve as "the means for allocating." The transmitter (12) and receiver (14) and their respective subcomponents are shown in Figure 2.

The Applicants submit that the Figures include proper spellings and show each feature of each claim and, thus, respectfully request that the Examiner withdraw the objections to the drawings.

The Examiner objected to the specification. The Applicant has inserted "and" after "allocated to each carrier)" and has changed "till" to "until" as suggested by the Examiner. The Examiner stated that "S" is not defined on page 9. The Applicants submit that "S" is defined. The specification states that "S" is the SNR (Sound to Noise Ratio) that is required, that "S depends on the noise characteristics and the constellation size," and that "S can be computed for different values of M [target bit rate] for a given bit error rate." See Page 9, lines 5-9 of original specification. As a result, the Applicants respectfully request that the Examiner remove the objections to the specification.

The Examiner objected to the Claims 1, 2, 3, 6, 7, 15, 16, 20-22, 29, 31, 33, and 34 as having various informalities and suggested various changes to cure the informalities. The Claims have been amended per the Examiners suggestions and do not have the stated informalities. The second clause of Claims 31 and 33 has been further amended to recite that "and for allocating a portion of the total excess power ~~is allocated~~ to a second carrier having a second smallest computed excess power to carry additional bits." The Applicants submit that amended Claims 31 and 33 lack informalities. Thus, Applicants respectfully request that the Examiner remove the stated objections for Claims 1, 2, 3, 6, 7, 15, 16, 20-22, 29, 31, 33, and 34.

The Examiner rejected Claims 1-41 under 35 U.S.C. § 112, second paragraph, as being indefinite. The Applicants traverse this rejection.

The Examiner asserts that Claims 1, 15 and 29 are unclear because it is "unclear . . . how the estimated signal to noise ratio relates to the bit error rate or target bit error rate." The Applicants submit that Claims 1, 15, and 29 are sufficiently clear.

Definiteness of claim language must be analyzed, not in a vacuum, but in light of:

(A) The content of the particular application disclosure;

(B) The teachings of the prior art; and,

(C) The claim interpretation that would be given by one possession the ordinary level of skill in the pertinent art at the time the invention was made.

MPEP § 2173.02 at p. 2100-199. Claims 1, 15 and 29 recite that “the target bit error rate with for the estimated signal to noise ratio.” The specification states that there is “an SNR [Signal to Noise Ratio] of S [that] is required” in order “[f]or a carrier to carry M bits at a target bit error rate B_{ber} .” See page 9, lines 5-9. Based on the Claims and the specification, one of skill in the art will appreciate that there is an estimated signal to noise ratio for the target bit error rate and that the bit error rate should be “less than or equal to the target bit error rate.” See Claims 1, 15, and 29. As a result, the Applicants respectfully submit that Claims 1, 15, and 29, and all Claims depending therefrom, are definite and request that the Examiner remove this ground for rejection.

Claim 24 has been cancelled, and therefore, the Examiner’s rejection of Claim 24 is rendered moot.

The Examiner rejected Claims 11, 25, and 36 as not having antecedent basis for “the smallest cardinality” and states that “it is unclear what is meant by ‘a set of carriers out of the plurality of carriers having the smallest cardinality.’” The Claims have been amended to address the Examiners lack of antecedent basis contention.

The Applicants refer the Examiner to page 13, lines 17-20, which states that:

Fractional bit allocation may be performed to increase the data rate. In this step, two carriers that can carry data by transmitting the same symbol are allocated first, then three carriers that can carry data by transmitting the same symbol are allocated next and so on. In other words, the set with the smallest cardinality is given the priority.

The Claims as amended read “a set of carriers having a smallest cardinality out of the plurality of carriers” and submit that one of skill in the art will understand the meaning of the quoted Claim language in light of the specification section quoted above. Thus, the Applicants respectfully submit that Claims 11, 25 and 26 are definite and request that the Examiner remove this basis for rejection.

Claim 32 has been canceled and, therefore, the Examiner’s rejection of Claim 32 is rendered moot.

The Examiner has rejected Claims 40 and 41 and asserts that “it is unclear what is means by ‘repeats.’” The Applicants have amended Claims 40 and 41, which now recite “the means for allocating . . . continue to allocate the bit rate for each of the parallel data streams and to allocate power until” “a target bit rate is achieved” (Claim 40) or “a predetermined allocation of time expires” (Claim 41). The Applicants submit that Claims 40 and 41 are definite and respectfully request that the Examiner remove this ground for rejection.

The Applicants traverse the objections and rejections made by the Examiner and submit that Claims 1-23, 25-31, and 33-41 are in condition for allowance. The Applicants request the Examiner to remove the stated objections and rejections and issue a Notice of Allowance for Claims 1-23, 25-31, and 33-41.

If the examiner finds that there are any outstanding issues which may be resolved by a telephone interview, the Examiner is invited to contact the undersigned at the below listed number.

A check in the amount of \$120.00 to cover any extension of time that might be necessary is submitted herewith. The Examiner is authorized to charge account no. 23-0920 to cover any

shortage of fees and requested to charge said charge account in the event that there has been an overpayment.

Respectfully submitted,

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